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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,931	01/22/2002	Yoshiaki Higuchi	218210US0CONT	3868

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EXAMINER	
CREPEAU, JONATHAN	

ART UNIT	PAPER NUMBER
1746	

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/050,931	HIGUCHI ET AL.	
	Examiner	Art Unit	
	Jonathan S. Crepeau	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/26/02, 1/22/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The International Preliminary Examination Report cited on the IDS of July 26, 2002 has been considered but has been lined through because it is an unpublished document. Additionally, duplicate citations on the information disclosure statements have been lined through. All other documents have been considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, 4, 7, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Mao et al (U.S. Patent 6,238,534). Regarding claims 1 and 7, the reference is directed to a membrane electrode assembly for a fuel cell (see abstract; col. 10, line 60 et seq.). Regarding claims 1, 4, 7, and 9, the membrane is biaxially stretched to reduce its thickness, which would thereby increase its surface area (see column 6, line 17). Regarding claims 1 and 7, the membrane comprises a perfluorocarbon polymer having sulfonic acid groups (see col. 6, line 16). Regarding claim 3,

which recites that the membrane is stretched by drying at a high water content while fixing the periphery of the membrane, this is a process limitation that does not appear to further limit the structure of the claimed product. If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See also MPEP §2113. Accordingly, the instant claims are not considered to be distinguished over Mao et al.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mao et al.

The reference is applied to claims 1, 3, 4, 7, and 9 for the reasons stated above.

However, the reference does not expressly teach that the surface area of the membrane is increased by 5-100% by stretching, as recited in claims 2 and 8.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be sufficiently skilled to adjust the amount of surface area upon stretching to a value between 5-100% greater than the

original surface area. As set forth in column 6, line 22, the amount of stretching is adjusted to affect the thickness of the membrane. As such, the surface area would also be affected as it is inversely proportional to the thickness. Accordingly, the claimed range of surface area increase of between 5-100% is not considered to distinguish over the reference.

6. Claims 5, 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mao et al. in view of EP 094679.

Mao et al. is applied to claims 1, 3, 4, 7, and 9 for the reasons stated above.

The reference does not expressly teach that the membrane is a copolymer of tertrafluoroethylene and a sulfonic perfluoroether component as recited in claim 5, that the membrane contains 0.1 to 50 mass % of fluoropolymeric fibrils (claim 6), or that the biaxial stretching is performed after extensible films are placed on both sides of the membrane (claim 10).

EP 94679 is directed to a process for producing an ion-exchange membrane. The membrane comprises a fluorinated ion exchange resin containing uniformly distributed fluoropolymeric fibrils (see abstract). The membrane contains an ion-exchange resin that is a copolymer of tertrafluoroethylene and a sulfonated perfluoroether (see page 4, line 7 et seq.). The fluoropolymer fibrils are preferably added in an amount of 0.2-20 wt% (see page 8, line 15).

The membrane is biaxially stretched (see page 11, line 13), and a plurality of extensible films may be laminated together before stretching (see page 12, line 26).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use the membrane of EP '679 in the fuel cell of Mao et al., and also to make the membrane in the manner disclosed by EP '679. On page 3, line 26, EP '679 teaches that, with regard to its membrane, "it is thereby possible to produce a fluorinated ion exchange membrane having adequate strength and low membrane resistance." The artisan, knowing that these are advantageous qualities in a fuel cell electrolyte membrane, would thereby be motivated to use the membrane of EP '679 in the fuel cell of Mao et al.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims1-33 of U.S. Patent No. 6,692,858. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instantly claimed limitations not recited in the '858 patent claims would be obvious to the skilled artisan. For example, while the '858 patent claims do not expressly recite a surface area increase as a result of the stretching, such an increase would occur because the thickness of the '858 membrane is being reduced. As such, the instant claims define obvious variations of the products and methods of the '858 patent claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (571) 272-1302. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jonathan Crepeau
Patent Examiner
Art Unit 1746
April 30, 2004